Civil Works Pocket Reference

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Pocket Reference

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TABLE OF CONTENTS

FIGURES

TABLE OF CONTENTS

TABLES

ACRONYMS	
ASA(CW)	Assistant Secretary of the Army (Civil Works)
CAP	Continuing Authorities Program
DSAP	Dam Safety Assurance Program
DOE	Department of Energy
DPR	Detailed Project Report
E&D	Engineering and Design
EPA	Environmental Protection Agency
FCA	Flood Control Act
FERC	Federal Energy Regulatory Commission
FUSRAP	Formerly Utilized Sites Remedial Action Program
F&WL	Fish and Wildlife
IWTF	Inland Waterways Trust Fund
GNF	General Navigation Features
LERR	Lands, Easements, Rights-of-Way and Relocations
LERRD	Lands, Easements, Rights-of-Way and Relocations and Disposal/Borrow Areas

ACRONYMS	
mlw	mean low water
M&I	Municipal and industrial (water)
NED	National Economic Development
OMRR&R	Operations, Maintenance, Repair, Replacement and Rehabilitation
PCA	Project Cooperation Agreement
PDC	Paid During Construction
PGL	Policy Guidance Letter
P.L.	Public Law
PMA	Power Marketing Agency
RHA	Rivers and Harbors Act
SA	Secretary of the Army
S&A	Supervision and Administration
SRUF	Special Recreation Use Fees
TPC	Total Project Costs
WRDA	Water Resources Development Act

NAVIGATION, General

Authority

- Stems from Commerce clause of the Constitution and Supreme Court decisions. Corps mission considered to have begun in 1824 when funds were appropriated to clear snags from Ohio and Mississippi Rivers.
- Specific Project Authorizations

Provisions

- Federal work must be in the general public interest and available to all on equal terms.
- The Federal interest extends only to GNF: primary access channels, anchorages, turning basins, locks and dams, harbor areas, jetties and breakwaters.

Cost Sharing

- This varies with the nature of the project. See **Table 1** on page 2.

NAVIGATION, Harbors

Authority

Sections 101 and 214, WRDA '86(P.L. 99-662)
Section 13, WRDA '88 (P.L. 100-676)
Section 201, WRDA 96 (P.L. 104-303)

Cost Sharing

Table 1. Cost Sharing (Harbors)

For providing project depths	The sponsor pays (% of GNF)
down to 20 feet below mlw	10%
over 20 feet and down to 45 feet below mlw	25%
exceeding 45 feet below mlw	50%

Cost Sharing (continued)

Non-Federal interests must:

- provide all LERR (with exceptions per page 4) for construction and maintenance;
- provide cash contributions toward the costs for construction of the GNF of the project, which includes the costs of constructing land-based and aquatic dredged material disposal facilities, paid during construction, per the schedule shown in **Table 1** (page 2);
- hold and save the U.S. free from damages due to the construction, operation and maintenance;
- contribute 50% of the incremental costs for operations and maintenance associated with project depths in excess of 45 feet;

Cost Sharing (continued)

- for all depths, provide an additional cash contribution equal to 10% of GNF, which includes dredged material disposal costs. These costs may be financed over a period not exceeding 30 years. The sponsor's costs for LERR, except utilities, are credited against the additional cash contribution. (See draft PGL No. 47, "Cost Sharing for Dredged Material Disposal Facilities and Dredged Material Disposal Facility Partnerships", dated 7/29/97, for details).

Relocations Exceptions

- The owner of a utility requiring relocation as part of an improvement deeper than 45 feet below mlw must fund 50% of the costs thereof.
- The owner of a bridge requiring modification must share in the costs according to the principles of the Truman-Hobbs Act (P.L. 77-647); the balance is cost shared as part of the GNF.

NAVIGATION, Harbors, Disposal Partnerships

Authority

Section 217, WRDA '96 (P.L. 104-303)

Provisions

- The SA may, at the request of a non-Federal interest, add capacity at a dredged material disposal site being constructed by the SA if the non-Federal sponsor pays, during the period of construction, all costs associated with the additional capacity. The non-Federal interest can set and collect fees assessed to third parties to recover those costs.

- The SA may allow non-Federal interests to use capacity in an existing Corps disposal site if such use will not reduce the availability of the facility for the Federal project. The SA can impose fees to recover capital, operation, and maintenance costs associated with the non-Federal interests' use.

NAVIGATION, Harbors, Disposal Partnerships

Provisions (continued)

- The SA may use public-private partnerships in the design, construction, management, or operation of dredged material disposal facilities in connection with construction or maintenance of Federal navigation projects. These partnerships may be implemented through agreements with non-Federal public interests, a private entity, or both. Funds for the work may be provided in whole or in part by the private entity. The SA may reimburse the private entity, subject to appropriations, for the disposal of dredged material in the facility through the payment of a disposal user fee. The fee shall be sufficient to recover the funds contributed by the private entity plus a reasonable rate of return on investment. The Federal share of the fee shall equal the Federal percentage of the disposal facility cost, in accordance with existing cost sharing requirements.

For more information, refer to draft PGL Number 47, "Cost Sharing for Dredged Material Disposal Facilities and Dredged Material Disposal Facility Partnerships", dated 7/29/97.

NAVIGATION, Inland Waterways Locks and Dams

Authority

- Section 102, WRDA ‘86 (P.L. 99-662)
- Section 206, Inland Waterways Revenue Act of 1978 (P.L. 95-502) , as amended by Section 1405, WRDA '86.
- Specific Waterway and Project Authorizations

Provisions

Lock and dam replacements are generally studied and recommended for specific Congressional authorization; other extensive work is normally accomplished under the major rehabilitation program.

NAVIGATION, Inland Waterways Locks and Dams (continued)

Cost Sharing

If the waterway users are subject to fuel taxes paid into the IWTF, there are no non-Federal cost sharing requirements in connection with Federal project improvements to the waterway (not for LERRD, construction, or OMRR&R).

Construction costs are funded 50% from the Federal general revenues and 50% from the IWTF. Maintenance costs are funded 100% from general revenues.

Inland channels not specifically designated by Congress as part of the taxable system will be cost shared according to the terms for harbors.

The source for Federal funding varies.

NAVIGATION, Section 107

Authority

- Section 107, 1960 RHA (P.L. 86-645) as amended. This is a continuing authority.

Provisions

- Without specific authorization, the Corps may study, adopt, construct and maintain navigation projects, using same procedures and policies that apply to Congressionally authorized projects.

- The Federal share of initial implementation costs for any one project may not exceed $4 million (per Section 915(d), P.L. 99-662).

- ASA(CW) policy also stipulates that the Federal share of total costs (initial costs plus the capitalized value of future maintenance costs) shall not exceed 2.25 times the initial Federal costs, or $4.5 million, whichever is greater.

NAVIGATION, Section 107 (continued)

Cost Sharing

- Non-Federal interests must participate in project costs in accordance with the established requirements herein set forth for navigation projects or measures (general harbor features, inland waterways, or recreational harbor features, as the case may be).

- The non-Federal sponsor is also responsible for all costs in excess of the Federal cost limitation.

NAVIGATION, Clearing and Snagging

Authority

- Section 3, 1945 RHA (P.L. 79-14), as amended. This is a continuing authority.

Provisions

- Without specific authorization, the Corps may undertake emergency clearing and snagging for navigation.
- May be used for clearance of obstructions both within authorized projects and at non-project locations used for navigation.
- May not be used for normal shoaling or betterments.
- No specific limit on Federal costs per location; there is an annual program limit of $1 million (per Section 915(g), P.L. 99-662).

NAVIGATION, Clearing and Snagging
(continued)

Cost Sharing

- Non-Federal interests are responsible for any LERRD requirements, for any recurring maintenance, and must hold and save the U.S. free from damages due to the construction.

NAVIGATION, Mitigation of Damages, Section 111

Authority

- Section 111, 1968 RHA (P.L. 90-483), as amended. This is a continuing authority.
- Section 940, WRDA '86 (P.L. 99-662)

Provisions

- Without specific authorization, Corps may study and implement works (structural or nonstructural) to prevent or mitigate damage to coastal or Great Lakes shorelines caused by Federal navigation projects.
- The Federal share of costs for any one project may not exceed $2 million. (Specific congressional authorization is required for a meritorious project for which the Federal share of costs would exceed this limit).

NAVIGATION, Mitigation of Damages, Section 111 (continued)

Cost Sharing

- Non-Federal interests must share in the mitigation costs in the same proportion they shared in the costs for the navigation project causing the damage.
- Non-Federal interests are responsible for operation and maintenance of the mitigation measures.

NAVIGATION, Recreation

Authority

- Section 103(c)(4), WRDA ‘86 (P.L. 99-662)

Cost Sharing

- Non-Federal interests must provide, at their expense, all ancillary shoreside facilities, marina facilities including interior access channels and berthing areas.

- Non-Federal interests must provide all related LERRD for construction and maintenance, except to the extent that the value may exceed 50% of the total (separable and joint, if any) recreational navigation costs.

- If the value of the LERRD contribution specified above is less than 50% of total recreational navigation costs (GNF costs plus LERRD), non-Federal interests must provide a cash contribution PDC, so that the total non-Federal share (cash plus LERRD) equals 50%.

NAVIGATION, Recreation

Cost Sharing (continued)

- Non-Federal interests must pay 100% of the OMRR&R costs and hold and save the U.S. free from damages due to the construction, operation and maintenance.

Note: Administration policy precludes budgeting for projects where recreational boating benefits predominate.

FLOOD CONTROL, Structural

Authority

- Sections 1 and 3, 1936 FCA (P.L. 74-738)
- Section 2, 1941 FCA (P.L. 77-228)
- Section 103, WRDA ‘86 (P.L. 99-662)
- Section 202(a), WRDA ‘96 (P.L. 104-303)

Provisions

- Federal Government should participate in improvement(s) for flood control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs (Section 1, 1936 FCA).

Cost Sharing

- Non-Federal interests must provide all LERRD uncontaminated with hazardous and toxic wastes, and a minimum cash contribution amounting to 5% of the flood control features of TPC, PDC. Non-Federal cost sharing requirements may be reduced if projects qualify for reductions under the ability-to-pay rule.

FLOOD CONTROL, Structural

Cost Sharing (continued)

- For projects authorized **before 12 October 1996**: If the value of the contributions specified above is less than **25% TPC**, non-Federal interests must provide an additional cash contribution PDC so that total non-Federal share equals **25% TPC**.

- For projects authorized **after 12 October 1996**: If the value of the contributions specified above is less than **35% TPC**, non-Federal interests must provide an additional cash contribution PDC so that total non-Federal share equals **35% TPC**.

- The maximum non-Federal contribution will not exceed 50% of TPC (5% cash plus 45% credit for LERRD). Arrangements for funding LERRD requirements that may exceed 45% TPC will be covered in the PCA.

- Non-Federal interests must pay 100% of OMRR&R costs and hold and save the U.S. free from damages due to the construction, operation and maintenance.

FLOOD CONTROL, Nonstructural

Authority

- Section 73, WRDA ’74 (P.L. 93-251)
- Section 103(b), WRDA ‘86 (P.L. 99-662)
- Section 308, WRDA ‘90 (P.L. 101-640)
- Section 202(a) WRDA ‘96 (P.L. 104-303)

Provisions

- In Corps project planning, consideration will be given to nonstructural alternatives to prevent or reduce flood damages.

Cost Sharing

- For projects authorized **before 12 October 1996**, non-Federal interests must provide all LERRD, except to the extent that the value thereof may exceed **25% TPC** for the nonstructural measures.

- For projects authorized **after 12 October 1996**, non-Federal interests must provide all LERRD, except to the extent that the value thereof may exceed **35% TPC** for the nonstructural measures.

FLOOD CONTROL, Nonstructural

Cost Sharing (continued)

- If the value of non-Federal contributions is less than 25% or 35% TPC (depending on whether the project was authorized before or after 12 October 1996) , a cash contribution must be made after project completion so that, when combined with that program value, the total non-Federal share equals the appropriate share (25% or 35%) of TPC.

- Non-Federal interests must pay 100% of OMRR&R related to nonstructural measures and hold and save the U.S. free from damages due to the construction, operation and maintenance thereof.

FLOOD CONTROL, Section 205

Authority

- Section 205, 1948 FCA (P.L. 80-858), as amended. This is a continuing authority.
- Section 202, WRDA '96 (P.L. 104-303)

Provisions

- Without specific authorization, Corps may study, adopt and construct small flood control projects.

Cost Sharing

- The Federal share of costs for any one project may not exceed $5 million (per Section 915(a), P.L. 99-662). The non-Federal sponsor is responsible for all costs in excess of the Federal per project limitation, even if it results in a non-Federal share greater than the maximum non-Federal cost sharing percentage for structural measures (50%, see page 18) or nonstructural measures (35%). The use of the Section 205 for such high cost projects is discouraged.

FLOOD CONTROL, Section 205

Cost Sharing (continued)

- Non-Federal interests must participate in project costs in accordance with the established requirements as previously set forth for flood control projects or measures (structural or nonstructural as the case may be), except that the non-Federal cost sharing percentage to be used will depend on whether the DPR was approved, before (25%) or after (35%) 12 October 1996. If no DPR was prepared, the non-Federal cost sharing percentage to be used will depend on whether construction was initiated before (25%) or after (35%) 12 October 1996.

FLOOD CONTROL, Clearing and Snagging

Authority

- Section 208, 1954 FCA (P.L. 83-780), as amended. This is a continuing authority.
- Section 202, WRDA '96 (P.L. 104-303)

Provisions

- Without specific authorization, Corps may study, adopt and construct in-stream clearing and snagging projects in the interest of flood control.
- The Federal share of costs for any one project may not exceed $500,000 (per Section 915(b), P.L. 99-662).

Cost Sharing

- Non-Federal interests must participate in project costs in accordance with the established requirements as previously set forth for structural flood control projects or measures under the Section 205 authority (see page 21).
- Sponsor is also responsible for all costs in excess of the Federal cost limitation.

FLOOD CONTROL, Emergency

Authority

- Section 5a, FCA of August 18, 1941 (P.L. 77-228), as amended
- Emergency Flood Control Funds Act of 1955 (P.L. 84-99)
- P.L. 87-874, RHA of 1962
- P.L. 93-523, Safe Drinking Water Act of 1974
- Section 82, WRDA '74 (P.L. 93-251)
- P.L. 95-51
- P.L. 99-662, WRDA '86, Section 917
- P.L. 101-640 WRDA '90, Section 302
- P.L. 104-303 WRDA '96 Section 203(e-f)

FLOOD CONTROL, Emergency (continued)

Provisions

Corps participation in:

- Planning and preparedness for all natural disasters;
- Flood fighting and rescue operations;
- Emergency repair and restoration of flood damaged or destroyed flood control works;
- Nonstructural alternatives to the repair or restoration of flood damaged flood control works;
- Emergency protection of Federal hurricane or shore protection works;
- Repair and restoration of Federal hurricane or shore protection project structures damaged or destroyed by extraordinary storm occurrences;
- Emergency supply of clean drinking water where source is contaminated; and
- Emergency supply of water for human consumption in drought distressed areas.

FLOOD CONTROL, Emergency (continued)

Cost Sharing

- Non-Federal interests must provide all required LERRD.

- The sponsor is responsible for 20% of the construction costs, including S&A, excluding E&D for repair or restoration of non-Federal flood control works.

- Advance measures are undertaken only to supplement state and local efforts (when their capabilities are exceeded).

- Non-Federal interests are responsible for 100% of the OMRR&R requirements in connection with any flood control measures undertaken pursuant to Section 5(a) of the FCA of 1941 as amended, and must hold and save the U.S. free from damages due to the construction, operation and maintenance of such measures.

FLOOD CONTROL, Emergency

Cost Sharing (continued)

- The sponsor may be asked, in connection with these or any other of the efforts authorized under Section 5(a) of the FCA of 1941 as amended, to provide such other measures of cooperation as, in the discretion of the Chief, would be appropriate to the specific case.

FLOOD CONTROL, Flood Plain Management Services Program

Authority

- Section 206, 1960 FCA (P.L. 86-645), as amended.

Provisions

- General authority to provide flood plain information and planning assistance to state, county, and city governments, as well as to other Federal agencies.
- Flood and flood plain information is also provided to private citizens, corporations, and groups.
- Flood proofing and general flood plain management guidelines are developed and published.
- Hurricane Evacuation Studies and Flood Warning Preparedness Studies are conducted jointly with other Federal agencies for state and local governments.

FLOOD CONTROL, Flood Plain Management Services Program
(continued)

Cost Sharing

- Non-Federal public entities may not pay the Corps for these services; private citizens and other Federal agencies may. Involvement of requesters is strongly encouraged.

HURRICANE AND STORM DAMAGE REDUCTION, Shore Protection, General Authority (including Beach Erosion Control)

Authority

- 1946 Shore Protection Cost Sharing Act (P.L. 79-727), as amended.
- Sections 103 (c) (5) and (d), WRDA '86 (P.L. 99-662)
- Section 55, WRDA '74 (P.L. 93-251)
- Section 14, WRDA '88 (P.L.100-676)

Provisions

- Establishes Federal policy to assist in the construction, but not the maintenance, of works for the improvement and protection of the shores of the U.S. against erosion by waves or currents.

- The Corps can provide technical and engineering assistance to non-Federal public interests in developing structural and non-structural methods of preventing damages attributable to shore and streambank erosion.

HURRICANE AND STORM DAMAGE REDUCTION, Shore Protection, General Authority (including Beach Erosion Control)

Provisions (continued)

- ASA(CW) policy stipulates that Corps projects be formulated primarily for hurricane and storm damage reduction.

- Sponsors must comply with Federal flood insurance and flood plain management programs requirements.

- The Administration's shore protection policy is that projects that support mainly recreation activities or projects in tourist or recreation areas that provide substantial income to regional and local economies can be undertaken by non-Federal interests.

Cost Sharing

- Non-Federal interests are responsible for providing all lands, easements, rights-of-way, relocations and dredged material disposal areas (LERRD).

HURRICANE AND STORM DAMAGE REDUCTION, Shore Protection, General Authority (including Beach Erosion Control)

Cost Sharing (continued)

- Costs assigned to protection of Federally owned lands and/or shores are 100% Federal.

- Costs assigned to privately owned lands (undeveloped) and shores (where use of the shores is limited to private interests) are 100% non-Federal.

- Costs assigned to privately owned, developed lands where criteria for public access to and public use of the shores are met are 35% non-Federal.

- Costs assigned to non-Federal public shores used for parks and recreation are 50% non-Federal.

HURRICANE AND STORM DAMAGE REDUCTION, Shore Protection, General Authority (including Beach Erosion Control)

Cost Sharing (continued)

- The non-Federal costs for LERRD will be credited against the sponsor's total (percent) responsibility or sharing construction costs; any excess of LERRD will be reimbursed to the sponsor.

- Non-Federal interests must pay 100% of OMRR&R costs assigned to non-Federal shores, and hold and save the U.S. free from damages due to the construction, operation and maintenance.

HURRICANE AND STORM DAMAGE REDUCTION, Shore Protection, Periodic Nourishment

Authority

- 1956 Beach Nourishment Act (P.L. 84-826)

Provisions

- Federal assistance in periodic beach nourishment is provided on the same basis as new construction when it would be the most suitable and economical remedial measure.

Cost-Sharing

- Costs are shared in the same proportion as the initial project construction costs (see pages 31, 32 and 33).

HURRICANE AND STORM DAMAGE REDUCTION, Shore Protection, Section 103

Authority

- Section 103, 1962 RHA (P.L. 87-874)
- Sections 103(c), 103(d), 103(i), and 915(e) (P.L. 99-662) WRDA '86

Provisions

- Without specific authorization, the Corps may study, adopt and construct small beach erosion control projects.
- Federal costs for each project may not exceed $2,000,000.

Cost Sharing

- Same as Congressionally-authorized projects (see pages 31, 32 and 33).

EMERGENCY STREAMBANK AND SHORE PROTECTION, Section 14 Authority

Authority

- Section 14, 1946 FCA (P.L. 79-526), as amended.
- Section 27, WRDA '74 (P.L. 93-251)
- Section 915(c), WRDA '86 (P.L. 99-662)
- Section 219, WRDA '96 (P.L. 104-303). This is a continuing authority.

Provisions

- Authorizes the Corps to study, adopt and construct emergency streambank and shoreline protection works to protect highways, bridges, and other public works, and nonprofit public services such as churches, hospitals, and schools.
- The annual program limit for Federal expenditures is $15,000,000, with not more than $1,000,000 in Federal expenditures at any one site.

EMERGENCY STREAMBANK AND SHORE PROTECTION, Section 14 Authority
(continued)

Cost-Sharing

- Locals provide needed LERRD and cash, as required, so the non-Federal share of total project costs is at least 25% (if the DPR was approved before 12 October 1996), or at least 35% (if the DPR was approved after 12 October 1996). If no DPR was prepared, the non-Federal cost sharing percentage to be used will depend on whether construction was initiated before (25%) or after (35%) 12 October 1996.

- When the Federal share of costs would otherwise exceed the project limit ($500,000), locals must provide the excess.

- Locals must provide OMRR&R for the completed project.

HYDROELECTRIC POWER, General

Authority

- Various Congressional statutes direct consideration of hydroelectric power.

Provisions

- Corps policy is to maximize sustained public benefits from each of its projects for all desirable purposes, including power.

- Power developed at Corps projects surplus to project needs is turned over to DOE for marketing (Section 5, 1944 FCA; P.L. 78-534).

- Non-Federal power developments may be constructed at Corps projects through FERC licensing procedures, and it is Corps policy to encourage non-Federal interests to develop such hydropower potential where it is feasible and not authorized for Federal development.

Provisions (continued)

- Recommendations for Federal development in Corps reports are made only if it can be shown that non-Federal development is impractical (i.e., non-Federal project would produce significantly fewer net NED benefits than a Federal project when all project outputs are considered).

- No general authority exists for Corps to develop power at non-Corps sites, but this has been done with specific Congressional authority.

Cost-Sharing

- All capital investment and OMRR&R costs allocated to power are reimbursable. DOE's PMA's establish power rates that will recover costs over time (usually 50 years).

- Section 103(c)(1) of P.L. 99-662 provides that cost sharing will be in accordance with existing law, which anticipates recovery of project costs after project completion through rates set by the PMA. As a matter of policy, every effort is made to seek payment of construction costs during the construction period.

- Section 703 of P.L. 99-662, authorizes the SA, upon request of non-Federal interests, to survey the potential and methods of rehabilitating former industrial sites, millraces, etc., for use as hydroelectric facilities, and to provide technical assistance in dredging projects to rehabilitate the sites that have been surveyed. In return, the non-Federal entity will receive the power produced or an equivalent value of power for a period o 30 years.

HYDROELECTRIC POWER, Facilities for Future Power Installations (Minimum Provisions)

Authority

Section 4, 1938 FCA (P.L. 75-761) and subsequent authorizing acts.

Provisions

- Penstocks and other similar facilities may be included in the initial construction of projects where power is not authorized.
- Requires approval of the SA, on recommendation of the Corps and FERC.
- Probability of future economic and financial viability and willingness of non-Federal interests to finance or contract for the facilities must be determined.
- Purpose of this authority is to preclude loss of hydropower viability and to provide significant future construction savings.

Cost-Sharing

- Costs allocated to hydropower are reimbursable. The power marketing agencies of DOE establish rates that will recover costs over time (usually 50 years) when the power is ultimately developed.

WATER SUPPLY STORAGE

Authority

- Water Supply Act of 1958 (P.L. 85-500), as amended.
- P.L. 88-140, Permanent Rights to Storage
- Section 932, WRDA ‘86 (P.L. 99-662)

Provisions

- Water supply storage may be included in any Corps reservoir to impound water for present and future municipal or industrial use. Not more than 30% of the total allocated costs may be for future water needs.

- Modification of an existing reservoir, by structural changes or reallocation of existing storage, to add or increase dedicated storage for water supply, requires separate Congressional authorization if it would significantly impact existing authorized purposes or involve major structural or operational changes. By policy, the Chief’s discretion for any such reallocation is limited to the lesser of 15% of total usable storage or 50,000 acre feet.

WATER SUPPLY STORAGE

Provisions (continued)

- P.L. 88-140 grants permanent rights to use the storage space to the sponsor upon completion of the payments of the costs of storage.

Cost-Sharing

- Sponsor must contract to provide 100% reimbursement of costs (including O&M on an annual basis and repairs, reconstruction, and major rehabilitations and replacements as they are required) allocated to water supply, within life of project but not more than 30 years from initial use of the project for water supply. For new projects, reimbursement is based on the actual development costs allocated to water supply storage. For reallocations, it is based on the current value of that storage.

- Current policy requires that all costs of construction be paid during the period of construction.

WATER SUPPLY, Surplus Water

Authority

- Section 6, 1944 FCA (P.L. 78-534)

Provisions

- ASA(CW) may make contracts with states, municipalities, private concerns and individuals, at prices and terms ASA(CW) finds reasonable, to provide surplus water or temporary use of available storage from Corps reservoirs for domestic and industrial uses, rather than reallocating and granting a permanent right to that storage. The storage must have been provided in the reservoir for some other purpose not yet being realized, or the water would have to be more beneficially used as municipal and industrial water than for authorized purposes. The use must not significantly affect the authorized purposes. Such contracts are normally limited to 5 years, with provisions for additional 5-year extensions.

WATER SUPPLY, Surplus Water
(continued)

Cost Sharing

- For the period of use, user pays an annual amount based on the updated cost for that part of the reservoir costs plus OMRR&R.

WATER SUPPLY, Minor Emergency Withdrawals

Authority

- Section 6, 1944 FCA (P.L.78-534)

Provisions

- When the governor of a state has declared an emergency due to drought, withdrawals of up to 50 acre-feet of storage may be permitted for domestic and industrial uses for a period of up to one year.

Cost-Sharing

- The cost assigned to the water is based on the current value of the storage, with a minimum of $50 per year. The permits are signed by the project manager.

RECREATION, Reservoir Projects

Authority

- Section 4, 1944 FCA (P.L. 78-534), as amended
- Federal Water Project Recreation Act, 1965, (P.L. 89-72), as amended
- Section 103(c)(4), WRDA ‘86 (P.L. 99-662)
- Section 2804 of P.L. 102-575 (Reclamation Projects Authorization and Adjustments Act of 1992)

Provisions

- Projects must be under control of the Army.
- Requires non-Federal cost sharing.
- If there is no willing cost sharing sponsor, Corps may only provide minimum facilities such as guardrails, gates, barricades, turnarounds, comfort stations and vault toilets for health and safety. The Corps may also provide type “C” visitor centers, handicap access and operational boat ramps.

RECREATION, Reservoir Projects
(continued)

Cost-Sharing

- Non-Federal sponsor pays all OMRR&R costs and 50% of the first costs of all recreation features, except when those costs are paid from SRUF funds.
- ASA(CW) requires the local share to be provided during construction.
- Minimum facilities are joint costs and are shared among the project purposes in accordance with Section 103(c).
- Upgrading sanitary facilities on Corps operated areas is a 100% Federal cost.

RECREATION, Non-reservoir Projects

Authority

- Section 4, 1944 FCA (P.L. 78-534)
- Federal Water Project Recreation Act, 1965 (P.L. 89-72), as amended
- Section 103 (c)(4), WRDA ‘86 (P.L. 99-662)
- Section 313, WRDA ‘90 (P.L. 101-640)

Provisions

- Requires local cost sharing.
- Recreation benefits do not influence project formulation. Non-reservoir structural projects must attain a benefit/cost ratio greater than unity without recreation.
- Facilities must be on land required for basic project.
- Separable lands may be acquired at flood control projects for access, parking and facilities required for health and safety.

Provisions (continued)

- Recreation development costs at structural flood control projects may not increase the Federal project cost by more than 10% without approval of the ASA(CW).
- Facilities are not provided at shore protection projects.
- Corps must consider recreation benefits in planning, operating, and maintaining its projects. Corps can expend up to $2 million annually to mitigate for the adverse impacts on recreation from the maintenance, repair, rehabilitation or reconstruction of a project.

Cost-Sharing

- Non-Federal partners pay 50% of the separable costs and assume OMRR&R.
- For harbor and channel projects, non-Federal partners pay 50% of the joint and separable costs allocated to recreational navigation and assume OMRR&R.
- ASA(CW) requires the local share be provided during construction.

ECOSYSTEM RESTORATION AND PROTECTION, General

Authority

- F&WL Coordination Act of 1958
- Federal Water Project Recreation Act of 1965
- NEPA (1969)
- Coastal Zone Management Act of 1972
- Clean Water Act of 1972
- Marine Protection, Research, and Sanctuaries Act of 1972
- Endangered Species Act of 1973
- WRDA's '86, '90, '92, and '96
- Coastal Wetlands Planning, Protection, and Restoration Act of 1990
- Executive Order 11990, "The Protection of Wetlands"
- Executive Order 11991, "Relating to Protection and Enhancement of Environmental Quality"

ECOSYSTEM RESTORATION AND PROTECTION, General (continued)

Provisions

- By law and administration policy, environmental protection, navigation and flood control are the primary Civil Works missions of the Corps.

- Mitigation and restoration typically involve the same types of actions, but for different purposes. Mitigation eliminates, reduces, or compensates for the adverse impacts of a proposed project on ecosystem functions, whereas restoration efforts focus on restoring an already degraded ecological condition to produce environmental benefits.

- Focus is on the restoration of ecosystem functions, not single species habitat or improvements that are primarily of economic or commercial importance. Acquisition of lands should be kept to a minimum. Design standards should reflect project specific risks; for example, a levee creating a wetland need not be built to flood control standards.

ECOSYSTEM RESTORATION AND PROTECTION, General

Provisions (continued)

- The Corps uses an ecosystem approach and the planning method of the Principles and Guidelines. The ecosystem approach focuses on protecting or restoring the structures and functions provided by a complete ecosystem.

- The Corps focuses on engineering solutions to ecosystem problems directly associated with the hydrologic regime. In instances where components of an ecosystem restoration plan are better addressed by other agencies, the Corps can collaborate with those agencies to address the hydrologic components or provide other types of planning and engineering expertise. The most likely components for Corps initiatives are wetlands, riparian, and other aquatic ecosystems.

- Proposed projects must be justified on the basis of monetary and non-monetary benefits, but a traditional benefit-cost ratio need not be developed since the primary benefit (improved ecosystem functions) is usually not measurable in dollars.

ECOSYSTEM RESTORATION AND PROTECTION, Specifically Authorized Projects

Authority and Provisions

As specified in the individual authorization.

Cost Sharing

The non-Federal sponsor:

- Pays 35% of total project first cost;

- Pays 100% of the cost of OMRR&R (per Section 210, WRDA '96, PGL No.48, 21 July 1997, Subject: "Cost Sharing for Specifically Authorized Environmental Projects");

ECOSYSTEM RESTORATION AND PROTECTION, Specifically Authorized Projects

Cost Sharing (continued)

- Provides all LERRD required. The value of LERRD is credited towards the sponsor's 35% share of total first costs, and the Corps will reimburse the sponsor for the amount that LERRD exceeds 35% of first costs. The sponsor cannot receive credit for work-in-kind, and must pay the difference between the 35% and LERRD in cash.

See the following pages for cost sharing for other restoration programmatic authorities.

ECOSYSTEM RESTORATION AND PROTECTION, Consideration of Project Modifications for Improvement of the Environment Within the Civil Works Program

Authority

- Section 1135 of WRDA '86, as amended.

Provisions

- This is a continuing authority to modify the structures and operations of Corps projects to improve the quality of the environment and restore ecosystem functions impaired by projects built by the Corps or jointly by the Corps and other federal agencies, or at any site that has been affected by a Corps project, if such measures do not conflict with authorized project purposes. Section 1135 projects can be located with mitigation improvements, but cannot be used to fulfill mitigation requirements.

- Consideration should be given to using other authorities (such as Section 216, page 67) if the expected restoration costs exceed the current Section 1135 per project Federal share limit ($5 million), or if restoration can be accomplished through no-cost, operational only changes.

ECOSYSTEM RESTORATION AND PROTECTION, Consideration of Project Modifications for Improvement of the Environment Within the Civil Works Program (continued)

Cost Sharing

Feasibility study funds are initially funded completely by the Federal government. However, if the proposal is approved for implementation, the costs of the feasibility study and plans and specifications must be included as part of the total project modification costs. The non-Federal sponsor is responsible for:

- paying 25% of the total project modification costs;
- providing all LERRD. The value of LERRD is credited towards the sponsors 25% share of the total first cost and the Corps will reimburse the sponsor the amount that LERRD exceeds 25% of first costs. The sponsor may provide not more than 80% of the non-Federal share as work in-kind expenses.
- paying 100% of OMRR&R.

ECOSYSTEM RESTORATION AND PROTECTION, Beneficial Use of Dredged Material

Authority

- Section 204, WRDA '92, as amended.

Provisions

- This is a continuing authority that allows the Corps to carry out ecosystem restoration and protection projects in connection with new or maintenance dredging of Federal navigation projects.

- These projects may be undertaken if the Secretary of the Army finds that monetary and non-monetary benefits justify project costs, and the project does not degrade the environment.

ECOSYSTEM RESTORATION AND PROTECTION, Beneficial Use of Dredged Material (continued)

Cost Sharing

Feasibility study funds are initially funded completely by the Federal government. However, if the proposal is approved for implementation, the costs of feasibility and plans and specifications must be included and shared as part of the total project modification costs. The non-Federal sponsor pays:

- 25% of project first costs, including all LERRD. The value of LERRD is credited towards the sponsor's 25% share of the total first cost and the Corps will reimburse the sponsor the amount that LERRD exceeds 25% of first costs. The sponsor cannot receive credit for work-in-kind and must pay the difference between the 25% and LERRD in cash.

- 100% of OMRR&R.

ECOSYSTEM RESTORATION AND PROTECTION, Aquatic Ecosystem Restoration

Authority

- Section 206, WRDA '96 (P.L. 104-303)

Provisions

The Corps may carry out aquatic ecosystem restoration and protection projects if the project will improve environmental quality, is in the public interest, and is cost effective.

Cost Sharing

Section 206 projects require 35% funding by non-Federal sponsors. Federal costs are limited to $5 million per project and $25 million for the national program per year. OMRR&R and LERRD are 100% non-Federal.

ECOSYSTEM RESTORATION AND PROTECTION, Fish and Wildlife Mitigation

Authority

- F&WL Coordination Act, 1958 (P.L. 85-624)
- Sections 103 (c) and 906, WRDA ‘86 (P.L. 99-662)

Provisions

- Provides for modifications of projects 60% complete or less on 12 August 1958.
- Section 906 of WRDA ‘86 establishes a comprehensive mitigation policy for water resources projects that generally reinforces and supplements the mitigation policy developed in response to the requirements of the Fish & Wildlife Coordination Act, which requires projects to include justifiable means and measures of mitigation.
- Requires Congressional authorization of land acquisition except for authority provided by Section 906(b), P.L. 99-662.
- Requires the Corps to determine justification and desirability of project modification.

ECOSYSTEM RESTORATION AND PROTECTION, Fish and Wildlife Mitigation
(continued)

Cost-Sharing

- Costs are assigned to appropriate project purposes in Section 103(c) and are shared accordingly.

ECOSYSTEM RESTORATION AND PROTECTION, Flow Regulation, Water Quality Control

Authority

- Section 102, Clean Water Act of 1972 (P.L. 92-500 as amended.
- Section 103 (c) and (d), WRDA ‘86 (P.L. 99-662)

Provisions

- In the planning of Corps projects, consideration shall be given to including storage for streamflow regulation.
- The need for, value of, and impact of such storage for water quality control shall be EPA determinations.

Cost Sharing

- Water quality enhancement costs are assigned to appropriate project purposes in Section 103(c) and are shared accordingly.
- OMRR&R - 100% non-Federal.

ECOSYSTEM RESTORATION AND PROTECTION, Flow Regulation, Other Than Water Quality Control

Authority

- Section 102, Clean Water Act of 1972 (P.L. 92-500)
- Sections 103(c) and (d), WRDA ‘86 (P.L. 99-662)

Provisions

- In the planning of Corps projects, consideration shall be given to including storage for streamflow regulation.
- The need for, value of, and impact of such storage (other than for water quality) shall be determined by the Corps.

Cost Sharing

- Costs are assigned to appropriate project purposes in Section 103(c) and are shared accordingly.
- OMRR&R - 100% non-Federal.

AQUATIC PLANT CONTROL

Authority

- Section 104, 1958 RHA (P.L. 85-500), as amended
- Sections 103 (c) (6) and 941, WRDA ‘86 (P.L. 99-662). This is a continuing authority.
- Sections225 and 540 of WRDA ‘96 (P.L. 104-303)

Provisions

- The Corps may cooperate with non-Federal agencies for authorized plant control on navigable water areas not under the jurisdiction of the Corps of Engineers (reservoirs, channels, harbors) or other federal agencies.

- Program limited to $12,000,000 a year.

- Initiation of aquatic plant control reconnaissance and feasibility studies must be approved by ASA(CW).

AQUATIC PLANT CONTROL (continued)

Cost Sharing

- Studies:

  Initial Appraisal Letter Report, 100% Federal

  Reconnaissance, 100% Federal (requires ASA(CW) approval to initiate)

  Feasibility (50% Federal)

- Control measures - 50% Federal, locals agree to hold and save free from damages.

- Research - Programmatic (100% Federal); Site Specific (50/50).

REVIEW OF COMPLETED PROJECTS PROGRAM (Section 216)

Authority

- Section 216, 1970 FCA (P.L. 91-611)
- Sections 103, 105 and 905; WRDA '86 (P.L. 99-662)

Provisions

- General authority for SA to review operations of completed projects, when found advisable due to changed physical, economic, or environmental conditions. A report is made to Congress on advisability for modifying structures or operations.

Cost Sharing

- Studies - Reconnaissance 100% Federal; Feasibility 50/50.

- Improvement costs are allocated to Federal or local interests in accordance with the basic project authority and existing policies.

DAM SAFETY ASSURANCE PROGRAM

Authority

- Section 1203, WRDA '86 (P.L. 99-662)

Provisions

- The Dam Safety Assurance Program (DSAP) provides for modification of completed Corps dams and related facilities for safety purposes due to new hydrologic or seismic data or changes in state-of-the-art design or construction criteria.

- Dam safety modifications which do not qualify under DSAP are accomplished under Operations and Maintenance, General funding (for smaller projects) or as Major Rehabilitation under Construction, General funding (for larger projects).

Cost Sharing

- Fifteen percent of dam modification costs under DSAP are shared in the same proportion as the initial project construction costs.

- Cost sharing is not required under DSAP if the original project had no cost sharing (or LERRD) provided by a sponsor.

PLANNING ASSISTANCE TO STATES (SECTION 22)

Authority

- Section 22, WRDA '74 (P.L. 93-251), as amended
- Section 605, P.L. 96-597
- Section 221, WRDA '96 (P.L. 104-303)

Provisions

- General authority for the Corps to cooperate with states, the District of Columbia, Puerto Rico, Virgin Islands, Guam, American Samoa, Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands (now only Palau).

- Corps provides technical assistance to support state preparation of comprehensive water and related land resources development plans, including watershed and ecosystem planning.

- Corps assists in conducting individual studies supporting the state plan.

- Assistance is given on the basis of state requests and availability of Corps expertise rather than through Congressional study authorization procedures.

PLANNING ASSISTANCE TO STATES (SECTION 22)

Provisions (continued)

- Section 22 cannot be used to supplement other ongoing or pending Corps efforts, or to offset required state contributions to Federal grant programs.

Cost Sharing

- Federal assistance is in the form of is on an effort or service sharing basis; it is not an outright grant.

- Non-Federal sponsor contributes 50% of the costs. Nationwide annual funds may not exceed $10 million, with not more than $500 thousand in any one year in any one state.

- Technical services, rather than grants, are provided without charge or cost sharing under other programs. See page 28 (flood damage reductions), page 30 (shore and streambank erosion), and page 40 (dredging). The Corps can provide assistance to state and local governments in disaster preparedness, response, and recovery efforts (Robert T. Stafford Disaster Relief and Emergency Assistance Act).

REGULATORY PROGRAM, Navigation Safety and Improvements

Authority

- Section 7 of the River and Harbor Act of 1917.

Provisions

- Corps may promulgate regulations for the use, administration, and navigation of the navigable waters of the United States for the protection of life and property and for the operations of the United States in providing channel improvements.

- Procedures for the promulgation of these regulations are similar to those for the permit program.

- Regulations can be prescribed for the use and navigation of “danger zones” - that is, any area likely to be endangered by Department of Defense operations. The Corps authority is exercised to facilitate DoD operations without endangering the boating public.

REGULATORY PROGRAM, Permits for Work in Waters of the United States

Authority

- Sections 9 and 10 of the River and Harbor Act of 1899.

Provisions

- (Section 9). The Chief of Engineers and Secretary of the Army must approve plans for the construction of any dam or dike across any navigable water of the United States. Legislative approval is also needed: if the navigable portion of the waterbody lies wholly within the limits of one state, the structure may be built under the authority of the legislature of that state; otherwise the approval of the U.S. Congress is required.

- (Section 10). The Chief of Engineers must approve plans to build or modify any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of navigable waters.

Jurisdictional Limits

- **For rivers and lakes**. Federal regulatory jurisdiction extends laterally to the entire water surface and bed of a navigable waterbody, which includes all the land, wetlands, and waters below the ordinary high water mark. (33 CFR 329.11(a)) At some point along its length, a navigable waterbody will change its character and lose its real or potential physical ability to support commerce. That upper limit point where the waterbody ceases to be a navigable water of the United States is usually termed the "head of navigation". (33 CFR 329.11(b))

- **For ocean and tidal waters**. The Corps regulatory jurisdiction includes all ocean and coastal waters generally within a zone three nautical miles seaward from the coast line. For bays and estuaries, jurisdiction extends to the entire surface and bed of all waterbodies subject to tidal action. This includes marshlands and similar areas insofar as those areas are subject to inundation by the mean high tidal waters.

Jurisdictional Limits (continued)

The base line (ordinary low tide line) from which the territorial sea is measured is specified in the Convention on the Territorial Sea and the Contiguous Zone. (15 UST 1 606; TIAS 5639; 33 CFR 329.12)

REGULATORY PROGRAM, Sections 103 & 404

Authority

- Section 404 of the Clean Water Act
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972

Provisions

- (Section 404). Secretary of the Army, acting through the Chief of Engineers, is authorized to issue permits for discharges of dredged or fill materials into the waters of the United States, provided that such discharges are found to be in compliance with the guidelines published by EPA to implement Section 404 (b) (1) of the Clean Water Act.
- (Section 103). The Secretary of the Army is authorized to issue permits for the transportation of dredged materials for ocean disposal when dumping will not unreasonably degrade or endanger human health, welfare or amenities, or the marine environment, ecological system, or economic potentialities.

REGULATORY PROGRAM, Sections 103 & 404

Provisions (continued)

- The selection of disposal sites will be in accordance with criteria developed by the Administrator of the EPA in consultation with the Secretary of the Army. The Administrator can prevent the issuance of a permit if he finds that the dumping of the material will result in unacceptable adverse impact on municipal water supplies, shellfish beds, wildlife, fisheries, or recreational areas.
- About 70% of the permit applications the Corps receives each year require decisions under the authority of Section 404.

Jurisdictional Limits

- **For the Clean Water Act.** Jurisdiction is more extensive than under the River and Harbor Act of 1899. (33 CFR 328)
- **For the Marine Protection, Research and Sanctuaries Act of 1972**. This Act defines a regulatory jurisdiction with respect to "Ocean Waters." (33 CFR 324.2)

REGULATORY PROGRAM, General Policies for Evaluating Permit Applications

The following policies are applicable to the review of all applications for Department of the Army permits.

Public Interest Review

- The decision whether to authorize a proposed activity, and if authorized, the conditions under which it will be allowed to occur, are determined by the outcome of the general public interest balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors which may be relevant to the proposal must be considered, as must their cumulative effects. Considered are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and, in general, the needs and welfare of the people. No permit will be granted if issuance is found to be contrary to the public interest.

REGULATORY PROGRAM, General Policies for Evaluating Permit Applications (continued)

The following general criteria will be considered in the evaluation of every application:

(a) The relative public and private need for the proposed structure or work;

(b) Where there are unresolved conflicts respecting resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work;

(c) The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work may have on public and private uses to which the area is suited.

REGULATORY PROGRAM, Section 404(b)(1) Guidelines Analysis

The following criteria must be met:

(a) Project must represent least environmentally damaging, practicable alternative;

(b) Project must comply with the applicable requirements, both Federal (for example, Marine Sanctuary Regulations) and state (such as state water quality standards);

(c) Project must not result in significant degradation of the aquatic environment;

(d) All reasonable steps (for example, dredging windows or wetlands restoration) must be taken to minimize project impacts.

REGULATORY PROGRAM, Types of Permits

Nationwide General Permits are issued by the Chief of Engineers for activities that are:

- on a national basis;
- similar in nature, and cause minimal environmental impacts (both individually and cumulatively).

Regional General Permits

Regional permits are issued by a District or Division Engineer for general activities when:

- the activities are on a regional basis;
- the activities are similar in nature and cause minimal environmental impact (both individually and cumulatively); and
- the regional permit reduces duplication of regulatory control by State and Federal agencies.

REGULATORY PROGRAM, Types of Permits (continued)

Programmatic General Permits

Programmatic permits are a type of general permit founded on an existing state, local or other Federal agency program and designed to avoid duplication with that program. They are issued to Federal, state and local agencies and Tribes when the agency:

- licenses some or all activities regulated by the Corps in water of the U.S.;
- provides an opportunity for public comment;
- protects the aquatic environment to the same degree as the Corps Regulatory Program.

REGULATORY PROGRAM, Types of Permits
(continued)

Individual Permits

Individual permits are issued by the District Engineer for activities that do not meet the criteria for a nationwide or regional permit.

- A standard permit requires a public notice, public interest review, and National Environmental Policy Act documentation.
- A letter permit may be issued without public notice for certain activities that would not have significant impacts and would encounter no appreciable opposition. These permits are issued under Section 404, after the District Engineer has published a list of categories of activities to be covered by abbreviated processing procedures.

Regulatory information is taken from IWR's "Regulatory Executive Training Session" textbook, CECW-O review, the Sacramento Website:

http://wetland.usace.mil/ and the Combined Federal Regulations: http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=199733

Authorities

- For Federal agencies: Economy Act (31 U.S.C. 1535), 10 U.S.C. 3036(d)
- For state and local entities: Intergovernmental Cooperation Act (31 U.S.C. 6505)
- For International Customers: Technical Assistance Program (33 U.S.C. 2314a); Foreign Assistance Act (22 U.S.C. 2357, section 607); Federal Technology Transfer Act (15 U.S.C. 3710a).

Provisions

- Major Subordinate Commands and FOA's are encouraged to outreach and accept reimbursable work, providing the criteria of ER 1140-2-211 are met. That regulation may be downloaded from:

http://www.usace.army.mil/inet/usace-docs/eng-regs/er1140-1-211/toc.htm

Provisions (continued)

The Corps reimbursable program supports non-DOD Federal agencies, state and local governments, Indian tribes, foreign governments, international organizations, and U.S. firms overseas.

The program is conducted in partnership with the private sector. While relying on the private sector for technical expertise, the Corps functions as an extension of the agency's staff providing Federal presence and government oversight.

CIVIL WORKS PROGRAM STATISTICS

Statistics calculated as of 30 September 1998 unless otherwise specified.

1. Fiscal 1999 and 1998 Appropriations (Millions of dollars)

Program	FY 1999	FY 1998
Construction, General	$1,465	$1,469
O&M General	$1,753	$1,740
Mississippi River and Tributaries	$324	$294
General Investigations	$162	$157
Regulatory Program	$106	$106
Flood Control & Coastal Emergencies	$0	$4
Other[1]	$288	$288
Total Appropriation	$4,097	$4,058

1 - Includes GE Funding and the Formerly Utilized Sites Remedial Action Program. 1999 funding appears not to total exactly because of rounding.

CIVIL WORKS PROGRAM STATISTICS
(continued)

2. Non-federal cash contribution expected, FY 1998: **$281 million**

3. Trust Fund revenue generated, FY 1998:
   Inland Waterway Trust Fund: **$105.9** million
   Harbor Maintenance Trust Fund: **$621.5** million

4. Number of military personnel assigned: 191

5. Civilian employee work years worked in Fiscal Year 1997: **25,522**

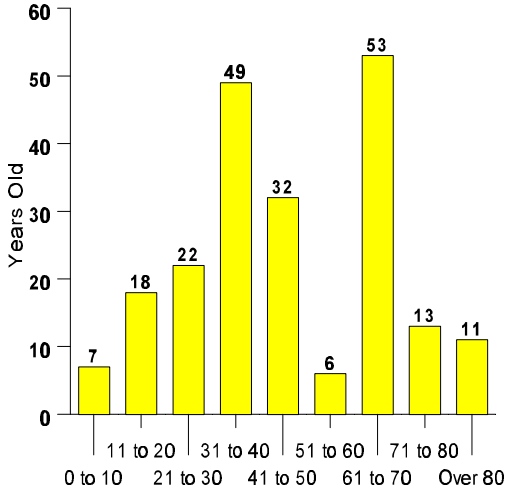
6. There are **8** division offices with Civil Works mission, and **38** district offices.

7. Number of projects under construction: **422**
   Specifically authorized by Congress: **308**
   Continuing Authorities Projects: **114**

8. Real estate managed (including underwater): **11.7 million acres (18,281 square miles).**

9. Total lake surface area at full pool: **9,934,000 acres (15,522 square miles)**.

Figure 1. Age Distribution of Lock Chambers by 2000, Fuel Taxed Waterways



10. Navigation

Commercial navigation (shallow draft) channels operated / maintained: **12,000 miles**
Navigation lock chambers owned and/or operated: **276** (237 O&M-funded)
Locks over 100 years old: **8**. Oldest 2 locks opened in **1839**

10. Navigation (continued)

Deep draft harbors (harbors deeper than 14 feet) maintained by Corps: **299** (WRDA '86 restricts the term "deep draft" to mean deeper than 45 feet.)

Shallow draft harbors (coastal & inland, no more than 14 feet deep): **627**

Tonnage handled by U.S. ports and waterways (1997): **2,333 million tons**

Value of foreign trade handled at ports (1997): **$676 billion**

Jobs generated by foreign trade at ports: **13.1 million**

Federal taxes generated by foreign trade at ports: **$146.4 billion**

Material dredged per year (construction & maintenance, 1998): **253.3 million cubic yards**

Dredges & other vessels owned/operated: **1,100**

Replacement value of Inland System: **Over $125 billion**.

11. Flood Control

Major lakes and reservoirs managed: **383**
Levees emplaced: **8,500 miles**

Average annual damages prevented by Corps projects (1989-98): **$21.1 billion**

Damage prevented in 1998: **$13.7 billion**

Cumulative damage prevented, 1928-98 (then-year $/ current year $): **$401/ $628 billion**

Flood control expenditures, 1928-98 (then-year $/ current year $): **$40.5/ $105 billion**

Damages prevented per dollar expended, 1928-98 (adjusted for inflation) **$5.98**

Flood damage suffered per year in U.S.(1987-98): **$4.5 billion**

Damage suffered in 1998: **$2.5 billion**

12. Flood Plain Management Services

Responses to requests for information in Fiscal Year 1998: **42,000**
Value of property affected by FPMS guidance: **$5 billion**

13. Ecosystem Restoration And Protection

Environmental activities within Fiscal Year 1999 appropriation: **$631.5 million**
Percentage of total appropriation: **15.4%**
Environmental Support for Others&Coastal Trust Fund work: **$273 million**.
Coastal America projects which Corps leads or co-leads: **70**
Section 1135 Projects completed since 1991: 32 (April 1999, E. Cummings)
Section 204 Projects completed: 3 (April 1999, E. Cummings)
Superfund hazardous/toxic waste sites located on Corps projects: **None**

14. Hydropower

Number of projects in operation: **75**
Installed generating capacity: **20,720 megawatts**
Power generated in 1996: **98.9 billion** kilowatt-hours
USACE owns & operates **24%** of U.S. hydropower capacity, or **3%** of total U.S. electric capacity
Revenue from power sales (Fiscal Year 1996): **$443 million**
Nonfederal power plants operated at Corps facilities (not counted in statistics above): **67, with 1,957 megawatts**

15. Recreation

Number of sites: **4,340**; at **456** Corps projects (mostly lakes)
10% of U.S. population visits at least one Corps project each year
Visits in 1998: **380 million**
Spent by visitors at Corps projects: **$10 billion**
Jobs (full or part time) generated by visitation: **600,000**
Concessionaires on Corps projects: **400**, with gross fixed assets of **$225 million**
Volunteers at Corps projects (1997): **68,000**
Volunteer hours worked, 1998: **1,041,000**

16. Water Storage

Total capacity of major Corps lakes: **329.2 million acre-feet**
Total active storage: **218.7 million acre-feet**
Projects with authorized municipal & industrial (M&I)/Irrigation water supply storage: **117 / 68**
Total authorized M&I storage: **9.52 million acre-feet.**
Value of authorized M&I storage: **$1,333 million**
Total M&I storage under a repayment agreement: **8.7 million acre-feet.**

17. Regulatory Program

Individual and letter permits issued in Fiscal 1998: **7,574**

Permits denied, Fiscal 1998: **199**

Activities authorized through regional permits: **40,404**

Activities authorized through nationwide permits: **41,879**

Percentage of permit actions completed within 60 days: **94%**

Acres of wetlands where activity was permitted: **31,090**

Acres of wetland restoration/creation required by those permits (1997): **46,630**

CIVIL WORKS PROGRAM STATISTICS
(continued)

18. Support to Other Agencies

Value of reimbursable work for other agencies in Fiscal 1998/ FTE's involved: **$800 million/1,072**

Number of agencies supported: **62**

Principal agencies supported: **Environmental Protection Agency; Federal Emergency Management Agency; Departments of Energy, Justice, Interior, Housing & Urban Development; Transportation**

19. Emergency Operations

Disasters responded to in 1998: **8**

Major emergency responses: **Hurricane Georges (PR, FL, AL, MS, LA); Hurricane Bonnie (NC, VA); Hurricane Charlie (TX), California flooding; Northwest flooding (WA, OR, ID, MT); Missouri Basin flodding (MO, KS): Southwest flooding (TX, OK, AR), Southeast flooding (GA).**

Figure 2. U.S. Flood Damages (1995 Dollars)

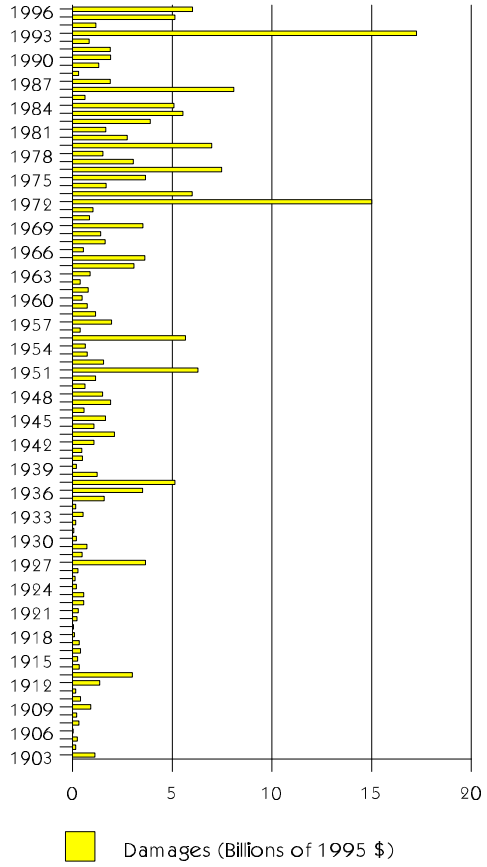


Figure 3. Flood Damages Prevented by Corps Projects (1995 Dollars)

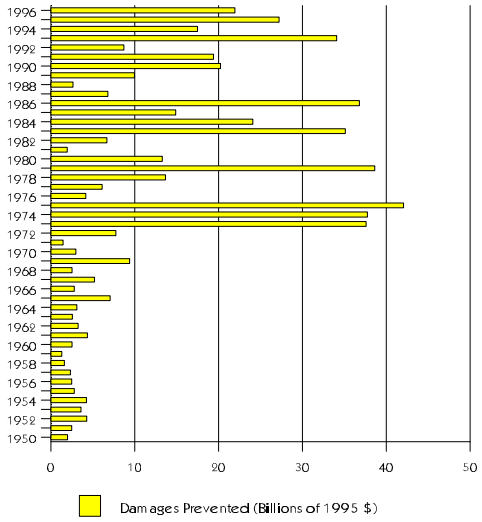


Figure 2 (previous page) shows historical damages over a 93 year period in 1995 dollars (i.e., adjusted for inflation). The charted data indicate that annual damages have increased over the decades.

Figure 3 shows damages prevented by Corps projects from 1950 through 1996. See qualifiers, next page.

QUALIFICATION FOR Figure 2 And Figure 3:

Figure 2 and **Figure 3** paint a picture both of the annual variability of flooding and the impact the Corps has had on reducing flood damage. But there are several complicating factors that should be considered before interpreting these data for a specific purpose.

Once a flood control project protects the floodplain, additional development of the floodplain may occur. In those instances, damages prevented may be larger than they would have been without the induced development. Note that damages actually incurred nationwide have been far less than damages prevented by Corps projects alone.

Projects of other Federal and local agencies also have prevented substantial, though lesser, damages.

Figure 2 includes coastal flooding damage, which includes some inseparable amount of wind damage, as well as crop damage caused directly by rainfall rather than stream overflow.

Conversely, the data likely omit a significant amount of *unreported* damage. Source: CEWRC-IWR-P.

Figure 4. Number of Corps Dams Built, by Decade

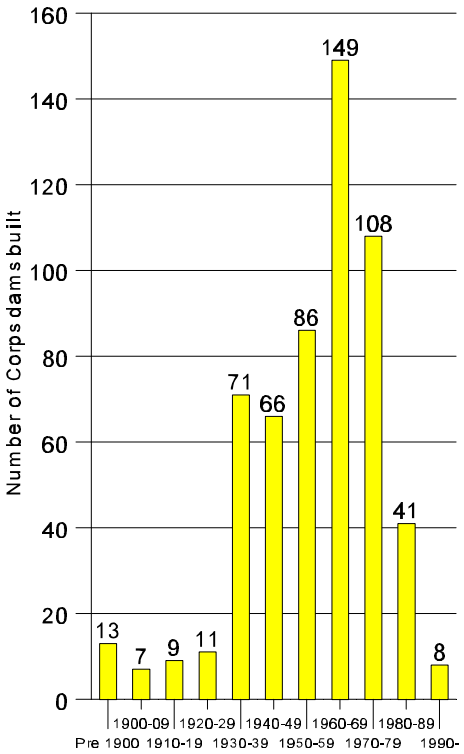
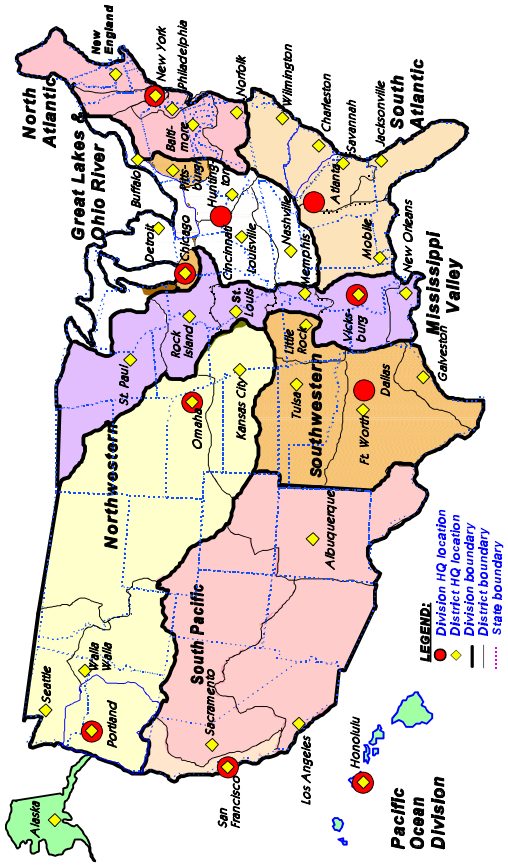


Figure 5. Division/District Map



CONTINUING AUTHORITIES FUNDING LIMITS

Table 2. **CAP Limits (Millions)**

Section	Refer to page	Federal Limit Per Project	Limit Total Federal Program
14	36	$1.0	$15.0
103	35	$2.0	$30.0
107	9	$4.0	$35.0
111	13	$2.0	N/A
204	58	None	$15.0
205	21	$5.0	$40.0
206	60	$5.0 $7.69*	$25.0
208	23	$0.5	$7.5
1135	56	$5.0 $6.66*	$25.0

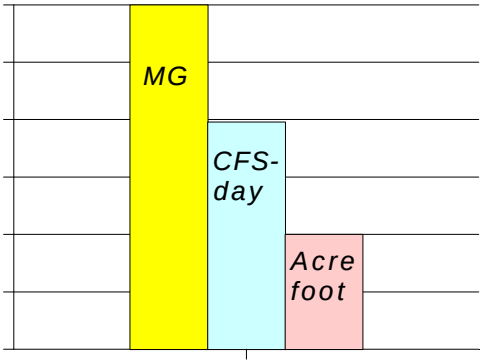
* limit on total project costs, Federal and non-Federal

Figure 6. Flow and Water Use Units.

Units of Flow. When discussing river flows, the standard unit of measure is “cubic feet per second” (cfs). When discussing the rate at which cities use water, the term “millions of gallons per day” (MGD) is normally used. A city withdrawing 1 MGD would reduce river flows by 1.547 cfs.

In the western U.S. and in agriculture, annual water use is often measured in “acre-feet per year”, a unit of flow (volume/time). A farmer using 724 acre feet per year would reduce flows by an average of 1 cfs. A flow of 1,120 acre-feet per year is equivalent to 1 MGD.

Figure 7. Volume and cumulative flow units



Units of Volume. The volume of water held in a reservoir is most often measured in acre-feet, the volume of water that would cover one acre at a depth of one foot. A million gallons is about 3 acre-feet. A "cfs-day" is the volume that would be filled by a flow of 1 cubic feet per second running for 24 hours. 1 cfs-day is about 1.98 acre-feet or about 646,000 gallons.

Figure 8. Costs of Wetland Restoration

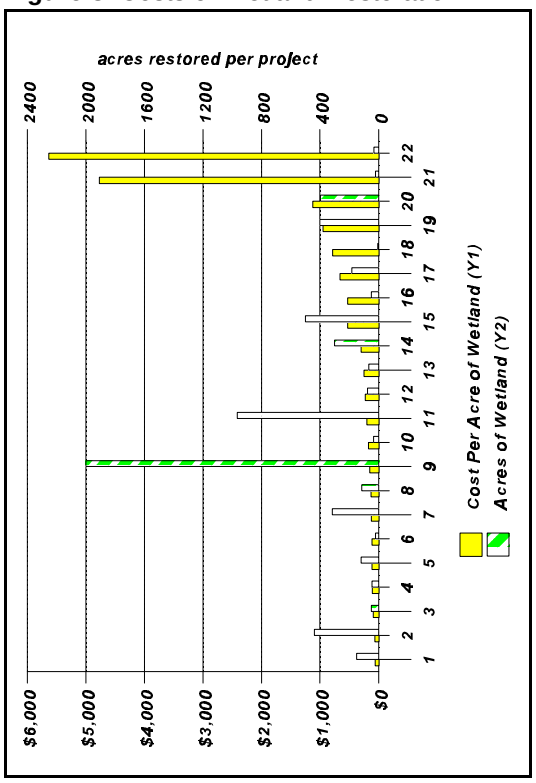


Figure 8 compares project cost (the average annual costs to create or restore the functionality of an acre of wetland) to project size (number of acres restored) at 22 Section 1135 projects across the country.

Figure 9. Number of Wetland Mitigation Banks (1976-1996)

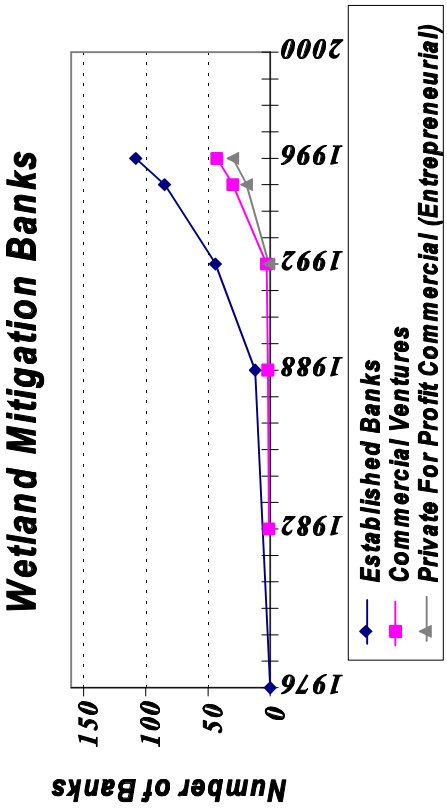


Figure 10. Wetland Mitigation Banks, Feb. 1997

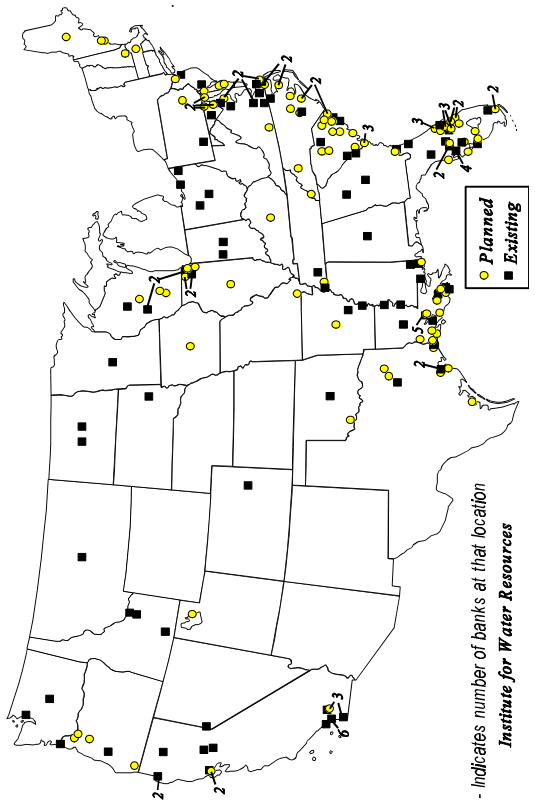


Figure 11. U.S. Water Use 1955-2000

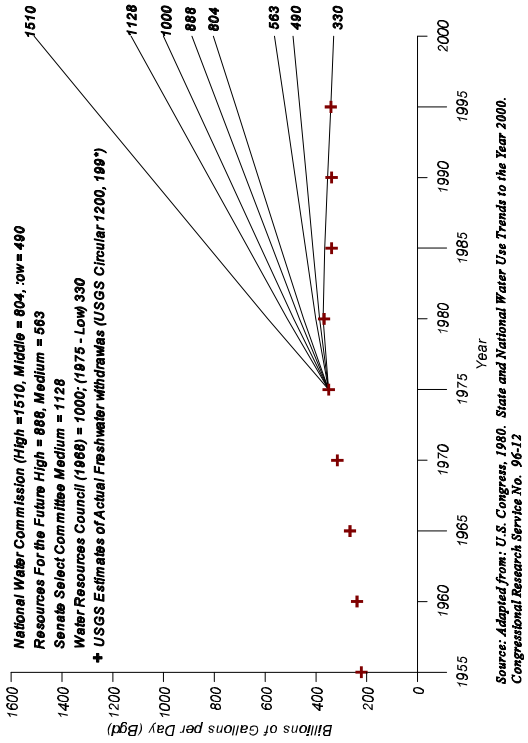


Figure 11 shows actual (1955 to 1990) and forecast freshwater withdrawals for all water uses. About 100 MGD were consumed in 1995, the rest was returned. Use since 1975 has confounded forecasters by staying flat. This is despite large increases in population, and largely because of long term water conservation programs.

Figure 12. Top 30 U.S. Ports, By Value (1995)

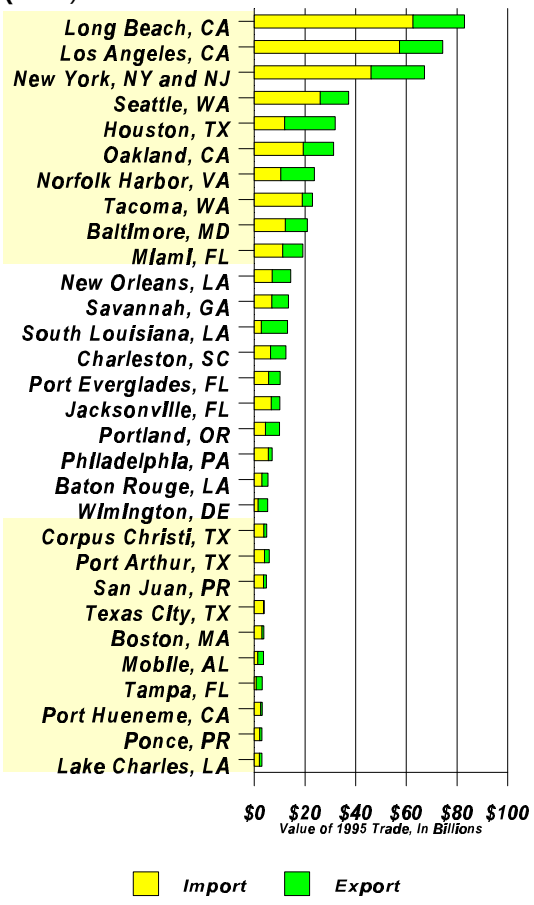


Figure 13. Top 30 Ports, by Cargo Weight (1995)

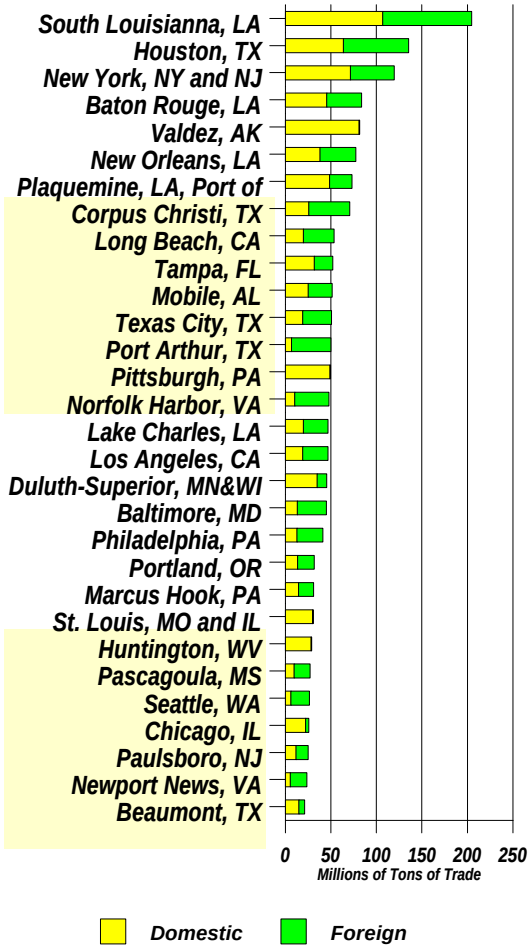


Table 3. U.S. Earthquakes Intensity IX, X, XI

Intensity Category			
Magnitude (Richter Scale)			
Date	**Location**		
1812-02-07	New Madrid, MO	8.8	XI
1811-12-16	New Madrid, MO	8.5	
1812-01-23	New Madrid, MO	8.4	
1906-04-18	San Francisco, CA	8.3	
1811-12-16	New Madrid, MO	8	
1971-02-09	San Fernando, CA	6.6	
1964-03-27	Prince William Sound, AL	8.3	X
1959-08-17	Hebgen Lake, MT	7.3	
1886-08-31	Charleston, SC	6.6	
1918-10-11	Mona Passage, PR	7.5	IX
1989-10-17	Loma Prieta, CA	7.1	
1983-10-25	Borah Peak, ID	7	
1994-01-17	Northridge, CA	6.7	
1885-10-31	Charleston, MO	6.2	

Magnitude is a seismographic measurement of movement in the Earth; **Intensity** measures effect on the surface.

Category IX earthquakes cause considerable damage even in specially designed buildings. **Category X** earthquakes destroy most masonry and some well built wooden buildings. **Category XI** earthquakes destroy bridges and severely bend railroad tracks. **Category XII** earthquakes, the highest category, cause total destruction. Source: USGS

Figure 14. Active Storage, 30 Largest Corps Lakes

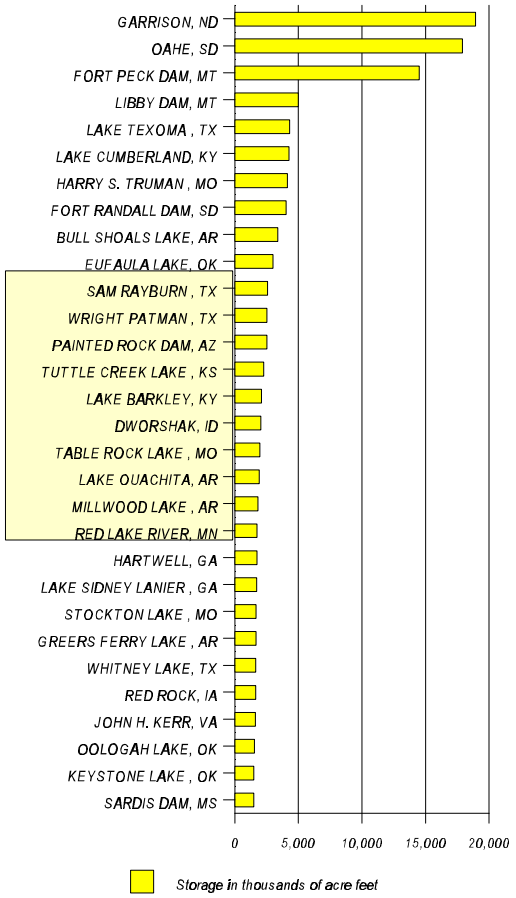


Table 4. The Likelihood That Rare Events Will Happen Over Time

Recurrence Interval (years)	Probability, in percent for indicated time period, in years				
	5	10	50	100	500
2	97	99.9	>	>	>
10	41	65	99.5	>	>
50	10	18	64	87	>
100	5	10	39	63	99.3

Example: There is an 87% chance that a 50 year event will occur in the next 100 years.
"> " means the probability is greater than 99.9%, but less than 100%

U.S. Droughts

9 On average, there is no U.S. water shortage. 1,400 billion gallons per day (bgd) are available in U.S. streams, and 380 bgd are withdrawn. Much of that 380 bgd is returned to streams after it is used.

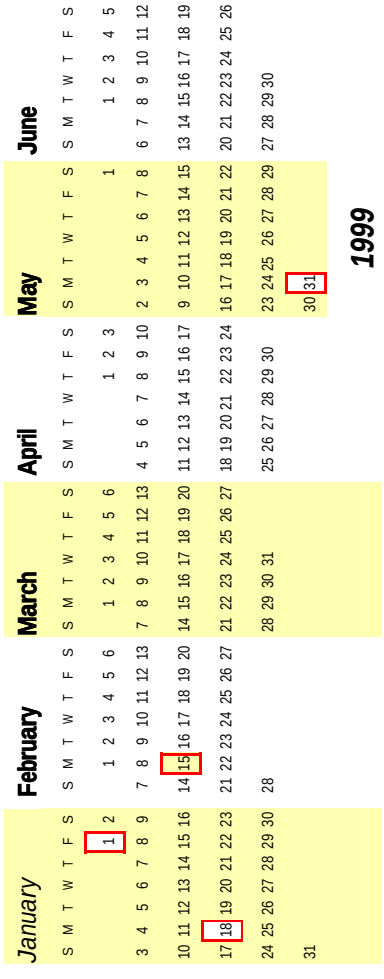
9 The severity of a drought can be expressed in terms of the percent of normal precipitation that falls. The longer the duration, the more likely that any given percentage of normal precipitation will fall. So it very unlikely that a ten year long drought will have significantly less than normal precipitation.

9 The rarity of any departure from normal can be expressed as its expected recurrence interval, for example “once in ten years”. This does not mean that a drought of that severity will occur every ten years, only that over a very long period of time, droughts that severe would be experienced in one-tenth of the years.

9 For a one year duration, precipitation during a “once in 50 year drought” will exceed one half (50%) the average precipitation in most of the U.S..

9 On average across the U.S., in any 5 year period, 84% or more of average precipitation will fall in a “once in 10 year” drought”, 76% for a “once in 50 year” drought, and 74% in a “once in a hundred year” drought.
Source - National Drought Study

1999 Calendar



July						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
13	14	13	14	15	16	17
20	21	20	21	22	23	24
27	28	27	28	29	30	31

August						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

October						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 31	25	26	27	28	29	30

November						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

1999

2000 Calendar

January						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

February						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29				

March						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

April						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

May						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

2000

July						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23 30	24 31	25	26	27	28	29

August						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

September						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

October						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

December						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 31	25	26	27	28	29	30

2000

2001 Calendar

January						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

2001

Federal Holidays

In the United States, there are 10 federal holidays set by law: Legal holidays: USC Title 5 Section 6103

Under current definitions, four are set by date:

New Year's Day . . . . . January 1
Independence Day . . . . . July 4
Veterans Day . . . . . November 11
Christmas Day . . . . . December 25

If any of the above fall on a Saturday, then the holiday may be observed on Friday (or on Monday if the holiday falls on a Sunday).

The other six are set by a day of the week and month:

Martin Luther King's Birthday
. . . . . Third Monday in January
Washington's Birthday
. . . . . Third Monday in February
Memorial Day . . . . . Last Monday in May
Labor Day . . . . . First Monday in September
Columbus Day Second Monday in October
Thanksgiving Fourth Thursday in November

General Election Day is not a holiday, but it falls on the First Tuesday after first Monday in November.

- from the U.S. Naval Observatory, Astronomical Applications Department

Names Phone Numbers

Names Phone Numbers